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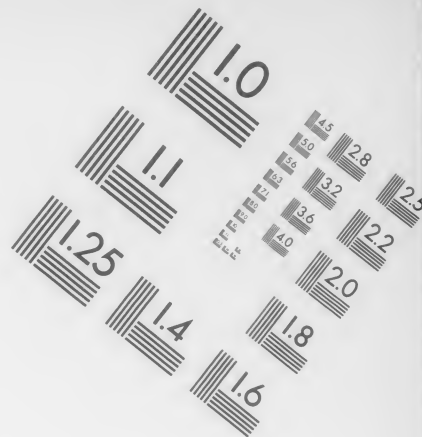
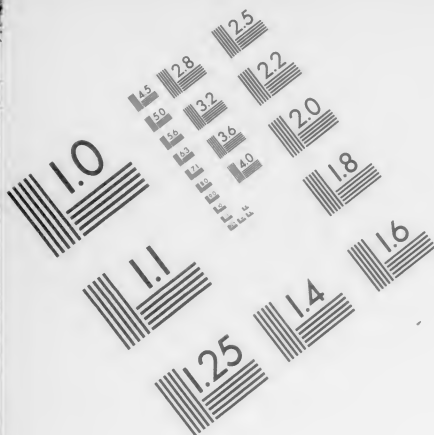


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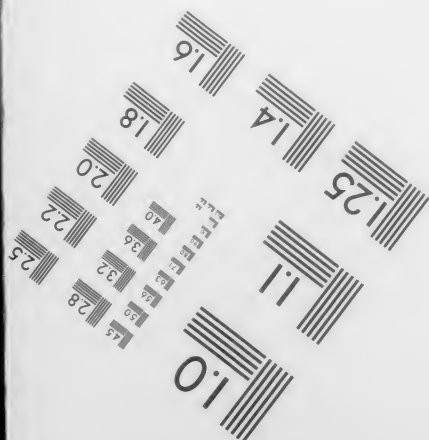
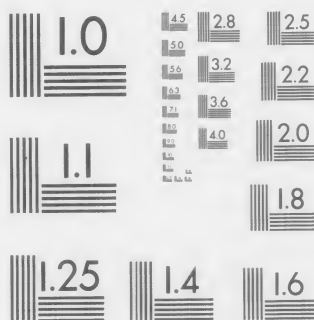
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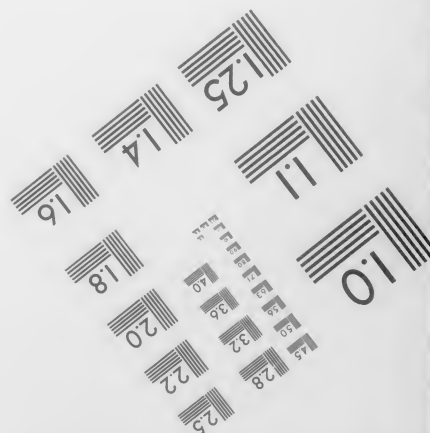
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THE VIVISECTION PROBLEM

A CONTROVERSY BETWEEN

CHARLES S. MYERS, M. D.,
OF CAMBRIDGE, ENGLAND,

AND

ALBERT LEFFINGWELL, M. D.,
OF NEW YORK.

PRINTED FOR THE
VIVISECTION REFORM SOCIETY

1907.

THE VIVISECTION REFORM SOCIETY has been incorporated as the exponent of the principle which demands not the total abolition of a scientific method, but prevention of the abuses which pertain to it. Within certain limitations, and for certain definite objects, it regards such experimentation as legitimate and right. Carried on beyond these bounds, vivisection becomes monstrous and cruel, a menace to humanity, an injury to the cause of science.

This Society will continue to oppose the atrocities of human vivisection, which it has brought to light, with the hope that they may some day be equally reprobated and condemned by the entire medical profession.

The vivisection of animals, carried on without legal regulation, sometimes constitutes a form of scientific torture, which, in the words of the late Dr. HENRY J. BIGELOW, of Harvard Medical School, "is more terrible, by its refinement and the efforts to prolong it, than burning at the stake." We shall aim to make this cruelty impossible, except as a crime.

To suppress such abuses as are admitted to exist, and to effect this without interference with any form of research conducted under State supervision and guarded against abuse, is the object of the Society.

The VIVISECTION REFORM SOCIETY appeals, therefore, for encouragement and support to all who have at heart the honor and interest of scientific advancement and the prevention of injustice and cruelty.

The fee for annual membership is \$2.00; for life membership, \$25.00.

VIVISECTION REFORM SOCIETY

Incorporated in 1903, under the Laws of the United States.

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NOTE.

The following papers are reprinted from the issues of the *INTERNATIONAL JOURNAL OF ETHICS* of April, 1904, January, 1905, and July, 1905.

In the first paper pertaining to the controversy, the writer was careful to state that he did not "engage in the practice of vivisection," and gave his readers no hint of the fact that he possessed a medical degree. The resulting omission of his title in the reply was thus very natural. A brief letter from Dr. MYERS indicates that he possesses the usual medical qualifications conferred in his native country; and he probably represents the attitude of a majority of the medical profession in Europe to-day—an attitude far different from that of the English people thirty or forty years ago.

IS VIVISECTION JUSTIFIABLE?

By CHARLES S. MYERS, M. D.,
CAMBRIDGE, ENG.

I.

It might reasonably be supposed that nothing new now rests to be said about a question which has been so often and so hotly discussed in the past as this, and has again and again temporarily become a theme of public interest. A little consideration, however, must show that the controversy has been confined almost entirely to parties in whom it is impossible not to suspect a certain degree of prejudice,—namely, those who practice vivisection and those who claim to be protectors of animals. It has, moreover, been carried on under the unsatisfactory conditions in which one side denounces the other as an ignorant, sentimental folk, whose enthusiasm for the immediate welfare of the animal world blinds their eyes to truthfulness and to the benefits of vivisection, while the "protectors of animals," on the other hand, insist that vivisectioners have about the same right to be heard upon the justifiability of vivisection as a bird-catcher on the propriety of cooking larks or of wearing osprey feathers. Vivisection is to their mind merely a passing fashion, for which unmerited academic position and the mistaken sanction of those occupied in scientific research form the attractive recompense. It is clear, then, that the subject can be treated with the necessary impartiality only by one who, while sympathetic towards dumb creatures and having adequate knowledge of modern biological science, does not engage in the practice of vivisection; who, if he desire adequate competency, should have some general acquaintance with the principles of ethics and have had a training in psychology that will help him to gauge the probable extent and intensity of animal suffering.

Two distinct questions have to be answered. Is vivisection moral? Is vivisection useful? The former question

clearly deserves consideration before the latter, for, if once vivisection be proved immoral, its utility can hardly remain a matter of serious concern.

II.

Of those opposed to vivisection on the ground of its immorality, there is a small section whose views may be conveniently stated at once, as they can then be dismissed with little further consideration. These people consider that the animals of this world are specially placed under man's protection by the Divine Will. They regard it as sinful and as an abuse of our superior intelligence for man to give pain to animals for any purpose whatever. They would, if possible, refuse to avail themselves of the discoveries obtained by such means, classing them, as did Miss Frances Power Cobbe, with the results obtained by "robbery, perfidy or any other crime between man and man." The end, they declare, never justifies the means. Now, to those who uphold this variety of anti-vivisectionist opinion, there is absolutely nothing to be said. Their standpoint rests on religious faith, which is naturally impregnable to argument. Were they only consistent; did they, for example, refuse to slaughter cattle or to poison vermin for the sake of increasing their creature comforts, one could not but respect their attitude.

This, which may, for brevity's sake, be styled the "religious" view, is the extreme form of another, more generally held and regarded, perhaps, as the "common sense" view. It permits the infliction of a certain amount of pain upon animals, provided that the gain to man is sufficiently great. It countenances the operation of castration, so crudely performed on millions of animals annually, on the ground that man obtains thereby better beasts of burden and finer quality of flesh and wool. It justifies the introduction of horses into the battlefield, because cavalry are indispensable in warfare. A salmon may be "played," a fox or stag may be hunted, because sport is man's instinctive recreation and because the skill or the social pleasures involved are sufficiently

great. But vivisection is intolerable, as its results are incommensurably small compared with the suffering produced. Such, no doubt, is the attitude of the majority of anti-vivisectionists,—an attitude which only a careful estimate of the resulting pains and gains of vivisection can confirm or condemn.

These two views, the "religious" and the "common-sense," as they have here been styled, are alike obtained from the "zoocentric" standpoint; that is, where vivisection appears immoral because of the suffering which must inevitably be inflicted on the animal world. But there is another and totally different point of view from which the subject may be regarded, the "anthropocentric" standpoint, which condemns vivisection, not so much on account of the *pain* endured by the animals, as on the ground of the *cruelty* involved; that is, the effect produced by animal suffering upon man. This third view may, perhaps, best be designated "naturalistic."

The question here arises, Who, in the absence of scriptural authority (rejected by naturalism), has a right to condemn as immoral a practice which is confined to a small but intelligent section of a community? It is well recognized that nearly every walk of life sanctions certain acts which in the other walks would be deemed immoral. Different communities, different sections of communities, frame their own systems of morality. The ethical codes of the company-promoter, the farm-hand or the slum-dweller differ both from one another and from that of the general population, just as, on a larger scale, the morality of the savage is different from that of the European. May not vivisection in this way be regarded as a moral act by physiologists and pathologists and as an immoral act by other people? In this event, have the latter the right to interfere with the practice? Most certainly they have. For, even if vivisection has not a deteriorating effect on the natures of those engaged in it, even if it does not render them callous and insensitive to the sufferings of others (a protasis which will be examined immediately), yet the general community may legitimately intervene on the ground that it is harmful for

them to feel that such suffering is being inflicted in their midst.

At his examination before the Royal Commission on Vivisection in 1875, Dr. Klein was asked (Q. 3539), "When you say that you only use them [anæsthetics] for convenience' sake, do you mean that you have no regard at all for the sufferings of the animals?" And his reply, "No regard at all," has been widely held to prove the utter heartlessness of those who experiment on living animals. Yet not only is Dr. Klein perfectly right, but—as everyone who knows them can testify—vivisectors are not less kind and sympathetic than any other body of men. The truth lies in the fact that everyone lives a life of multiple personalities. The man of business is one person at his office; he is another in the heart of his family. The thoughts of the botanist, when dissecting flowers, are not those he has when admiring a beautiful landscape. The surgeon and the vivisector before the operating table have to banish all regard for the victim of their knife. Sympathy would be not only useless, but positively detrimental to the success of their work. All attention has to be concentrated on the operation which mature consideration has previously dictated.

Indeed, there is no ground for suspecting that vivisection has a baneful effect on the temperament of those that practice it. The question remains, then, Has the public a right to intervene on account of the cruel acts which, it feels, are being perpetrated? And thus the further question arises, How much pain does vivisection produce? It is well understood that two kinds of experience of very different origin are included under the word "pain." In one sense, pain is opposed to pleasure, and has reference to the general tone of consciousness, called feeling. Thus, we are pleased at success, pained at bereavement; an animal is pleased at the sight of food, pained when chased by the foe. In the other sense, pain is the result of appropriate stimulation of almost any sensory nerve in the body. Common parlance distinguishes these two kinds of pain as "mental" and "physical." Now, there is little evidence of mental pain in the subjects of vivisection. Again and again dogs have been observed

to wag the tail or lick the hands of the operator, even immediately before the beginning of the experiment. Shortly after the severest operation an animal is generally ready to eat its food. With regard to physical pain, it is desirable to consider somewhat fully the object of vivisection experiments, before an estimate of the amount involved can be arrived at.

Vivisection is employed to throw light either on healthy (physiological) or on morbid (pathological) processes. The prime aim of physiological experiment, broadly speaking, is to place the animal under the most natural conditions attainable. Pain itself is hardly ever the object of study. It is detrimental to the purposes of physiological experiment and is studiously avoided. Every effort is made to diminish it, even in those cases where organs or parts of organs are removed from the body in order to test their function by a process of elimination; in such operations an anæsthetic is always administered. "In no case has a cutting operation more severe than a superficial venisection been allowed to be performed without anæsthetics"¹ during recent years in this country. Surgery is strictly aseptic. Should sepsis set in, the law requires that the animal be killed. Pain is obviously detrimental to physiological experiment because of the accompanying disturbances in muscular action by which we commonly recognize it. Changes in the calibre of the blood vessels, changes in the force and frequency both of the heart-beat and of the respirations, cries and bodily movements,—these are the signs of pain. Clearly, all, in various degrees, impair the success of physiological research, and are to be avoided. But, while they are all *concomitants* of pain, it must never be forgotten that they are by no means sure *evidence* of pain. Cries and muscular movements, apparently indicative of pain, may occur during operation on man, when the subject is perfectly under the influence of an anæsthetic. They may be evoked from an animal when its cerebral hemispheres are no longer connected with the rest of the nervous system. Nor are these concomitants a sure

¹ Reports of the inspector of experiments performed on living animals (Acts 39 and 40, Vic. C. 77), 1901, 1902. A similar sentence occurs in Reports 1899 and 1900.

measure of pain. Man is only too prone to suppose that the behaviour that he observes in others implies the presence of the same state of feelings in them as would induce the same behaviour in himself. When an animal manifests the appropriate signs, the sentimentalist at once leaps to the conclusion that it must suffer just the feelings of distress which would be his under similar conditions. Errors of this kind are so well known to students of mental phenomena that they have been termed "the psychologist's fallacy." Now, there is abundant evidence to show that, even in man, wide differences in sensibility to pain exist, varying according to race and civilization. The natives of the Torres Straits, for instance, who have been expressly examined in this respect, proved to be about half as sensitive to pain as Englishmen.² How much more obtuse, then, must be the suffering of animals, who differ in mental build from man immeasurably more than the races of men differ from one another!

Moreover, those areas of the body, stimulation of which can produce painful sensations, are far less numerous than might be supposed. It is true that, when inflamed, almost any part may become painful. But, under non-inflammatory conditions, most, if not all, the internal organs may be handled painlessly. Thus, Sir Charles Bell wrote of the human brain, "I have had my finger deep in the anterior lobes of the brain, when the patient, being at the time acutely sensible and capable of expressing himself, complained only of the integument."³ The recent experiments of Professor Lennander on man have confirmed the view that the human viscera and their supporting peritoneum are wholly insensitive to pain. Bichat long ago wrote that he had seen dogs tearing their peritoneum and devouring their own intestines, which had protruded from a hole in the abdominal wall. Considerations of this kind only show what control the layman should exercise over the springs of his natural pity, when he reads of seemingly painful, but really painless, experiments upon the internal organs of living animals, which

² Reports of the Cambridge Anthropological Expedition to the Torres Straits. Cambridge, 1903. Vol. 2, p. 195.

³ Quoted in "Experiments on Animals," by Stephen Paget. London, 1903. P. 75, footnote.

physiologists of this country compulsorily, of others voluntarily, put under the influence of an anæsthetic during such operations.

It is not to be denied that some pain must ensue during physiological experiments, and it may be urged with reason that the amount of pain must be considerably greater when vivisection is performed for pathological ends. This objection gains apparent support from the fact that the greater number of vivisections performed by pathologists in this country require a license, known as Certificate A, which permits experiment without an anæsthetic. It has, however, been already explained that no operation more severe than the section of a superficial vein is allowed to take place with this certificate. Of the 12,776 vivisections performed with Certificate A last year, 7,854 were merely inoculations, the chief objects of which were to diagnose various diseases in animals and man (no less than 153 referred to the detection of rabies), to examine milk for the bacillus of tuberculosis, hair for the bacillus of anthrax, to test the safety of atmospheric air and sewage, to standardize antitoxins for the purpose of protecting animals and man from disease. A large proportion of such experiments must have been absolutely negative. The air or the milk, for example, must have been often healthy, and the inoculated animal suffered no more pain than was involved in the needle-prick. Moreover, the law of the country compels the vivisector to kill the animal when the object of the experiment is completed, if, as is sometimes inevitable, pain ensues from inoculation. Even when it dies of a drug or a toxin, the pain of such a well-fed animal cannot exceed that of a poisoned, uncared-for rat or house-mouse.

In fine, not only is the pain of vivisection reduced to its lowest limits, not only do the interests of the experimenter and the law compel him to take good care of the animal, but the severity of animal suffering is far less than the lay mind would naturally suppose, and there is no reason to believe that vivisection renders the operator indifferent to the feelings of others.

III.

It is, fortunately, needless to examine the second part of the problem, namely the utility of vivisection, at such length as the first. The necessary material has been ably and impartially published by Stephen Paget in his "Experiments on Animals," and may be directly consulted by those who wish to investigate the subject without prejudice. Foremost among the results of modern vivisection stands our vast progress in the study of micro-organisms and their relation to the prevention and cure of disease. Now, certain essentials have to be rigidly fulfilled, before any micro-organism can be definitely proved to be a factor in the production of a disease. The bacillus must be constantly present in all cases; it must be isolated and cultivated outside the body; it must produce a similar disease *when introduced into another organism*, in which, again, the presence of the bacillus must be proved. Bacteriology, then, *depends upon* vivisection. By means of inoculation, not only is the absolute proof established of the dependence of disease upon the micro-organism, but antitoxins—certain chemical substances which are elaborated in the blood of appropriately inoculated animals by nature for the purpose of resisting the disease—have been isolated for use, to the enormous benefit of animals and mankind. As Stephen Paget points out (*op. cit.*, p. 289), "In Cape Colony alone, so far back as 1899, almost half a million cattle had received preventive treatment against rinderpest." Tuberculosis in cattle has been likewise checked by the use of tuberculin. The severity and fatality of typhoid fever, and especially of diphtheria, have been unquestionably reduced by the use of the appropriate antitoxin. Similar success has attended the antitoxin treatment of Mediterranean fever, which for so long defied every known drug. Hardly a failure is on record from the treatment of snake-bite. The value of vaccination in small-pox is universally recognized by those competent to judge. And even where bacteriological research has yielded no cure, its influence has been scarcely less striking. The remedy for tuberculosis has still to be found, but untold good has al-

ready resulted from the discovery that a bacillus lies at the root of the disease. Precautions are now taken (rightly or wrongly, it remains to be seen) against tuberculous meat and milk, a more sanguine view of consumption of the lungs is entertained, the sputa are disinfected and the patients are isolated at any early stage of the disease. Contrast this condition of affairs with the present attitude towards cancer, of the causes of which we are totally ignorant, or towards diabetes of which vivisection has so far taught us something, but not everything of the ætiology. Experiments on living animals are at this moment being performed, to preserve animals and men from these dread diseases. Who, in the name of reason and humanity, would forbid them?

Heroes have not been wanting who have offered their own persons for experiment to advance pathological knowledge. In the researches upon yellow fever, several individuals were experimentally inoculated. The transmissibility of bovine tuberculosis to man has been similarly tested. A martyr met his death, demonstrating the contagiousness of Peruvian Sore. Two Englishmen, to prove the connection of the mosquito with malaria, submitted their bodies to be bitten by mosquitoes which had been sent here from Italy after having been fed upon the blood of malarious patients. If legislation can stay experiments on living animals, it is powerless to prevent voluntary experiment of man on himself. The first use of a new drug, the first performance of a new operation, are not these experiments of man on man? Should the invaluable anti-plague *bouillon* have been tested on men, instead of on rabbits, before its introduction as a national remedy? Or should men, instead of monkeys, have been experimentally fly-bitten, in order to obtain proof that the tsetse-fly transmits to men the micro-organism of sleeping sickness; the *Anopheles* mosquito, the micro-organism of malaria; the *Culex* mosquito, that of yellow fever and of elephantiasis? Havana is practically rid of yellow fever for the first time in history, and malaria is fast disappearing in similar fashion from its haunts, wherever stagnant pools are properly treated so as to make them serve no longer as the breeding places of mosquitoes.

It is almost needless to give further examples of the value of vivisection experiments. The experimental determination of the functions of various parts of the cerebral hemispheres, especially in the monkey, has led to successful operations in certain forms of epilepsy and cerebral tumor where the affected area can be accurately localized, inspected and removed. The discovery of the meaning of the sounds of the heart was aided by the modification of one or other sound in animals by experimental means. Vivisection has completely changed our views of the relation of the internal organs of the body to the general economy. Indeed, as Charles Darwin declared, "I cannot think of any one step which has been made in physiology without that aid."

It has been said that these various advances might have been made without the aid of vivisection, but history shows plainly enough how in the absence of experiment men cling to authority rather than admit the discovery of new facts. In his address at the last year's Medical Congress at Cairo, Professor Bouchard declared that "the empiricism of older days has given us nearly all our drugs, among which are several which cure, . . . the use of which we have learnt by happy accident."* Fortunately, "happy accident" and mediævalism no longer content us: the modern spirit requires accurate and systematic investigation. It is true that quinine was known to cure malaria long before the *plasmodium malariae* was found, but the discovery of the *plasmodium* and our knowledge of its life-history have enabled us to administer the drug for men rationally and efficiently.

A favorite quotation in anti-vivisectionist literature is culled from the works of the great English vivisector, Sir Charles Bell: "Experiments have never been the means of discovery." This sentiment is broadly true in one sense. Experiments are rarely performed with a view to discovery, and rarely lead to it by accident. No scientific investigator would say, "Let us make this experiment and see what we can discover." He frames a theory on the basis of the facts already known to him, and he proceeds to confirm or to re-

* Lancet, Feb. 7, 1903.

ject this theory by an appeal to experiment. It is in this way that knowledge advances. Without experiment it must stagnate.

Apart from all question of its morality and utility, vivisection leads directly to increased wisdom. Apart from the fact that the useless disconnected knowledge of to-day becomes the useful co-ordinated knowledge of the morrow, any rational mode of research which yields new results is imperishable. With all its power, Legislation can never quench the thirst after Truth, or extinguish the race of Martyrs. As long as retrograde and progressive sections co-exist in the same community, so long will the efforts of the reactionary always be felt within it. There will be always some to maintain the geocentric theory of the universe or the seven-day theory of creation, however clear the evidence to the contrary; always some to believe that the Fall of Man comes from the Fruit of Knowledge. These are the real opponents of Vivisection.

THE VIVISECTION PROBLEM

A REPLY.

BY ALBERT LEFFINGWELL, M. D.
NEW YORK.

The thoughtful article on vivisection which appeared in the April number of this periodical is suggestive of conclusions with which some of its readers are not inclined to agree. By a process of reasoning, based, we think, upon an imperfect acquaintance with the facts, the writer has apparently come to believe that animal experimentation is so carefully and humanely carried on, so free from all abuse and so productive of benefit to humanity that it should be permitted to continue, untouched by the criticism of the "sentimentalist" and unhindered by restriction or restraint. What defects are to be found in Mr. Myers' line of reasoning? Why do arguments, such as those which he has so ably presented, fail to convince some whose regard for the progress of science is as genuine as his own? Against the suggestion or claim that vivisection is, in effect, altogether right, how is it that some intelligent men believe that certain phases of the practice are unjustifiable and wrong? Within the limits of a brief paper, it is, of course, impossible to bring forward all the reasons for dissent; but some outline may be given, sufficient to define the differing standpoint of those who believe that without definite limitations, the practice of vivisection is sometimes carried to an extent which is not ethically just.

Is vivisection ever painful? Does it sometimes imply prolonged agony? This seems to us a matter of no little importance. We think that the decision regarding the morality of the practice rests almost entirely upon the answer to this one question. Could it be demonstrated beyond doubt that a dog undergoing vivisection suffers no more of what we call pain, than a tuft of grass torn out by its roots, or a flower pulled to pieces, the justifiability of animal vivisection

would be assured. The impeachment of unlimited vivisection rests wholly upon the conviction that in some of its phases it is productive of agony. A few years ago hardly anybody in the medical profession questioned the fact. To-day, nearly every apologist for the method, attempts, as Mr. Myers has done, to show the absence of any great degree of discomfort. Every effort, he assures us, is made to diminish pain; "an anæsthetic is always administered"; the pain of certain inoculations is but that of a needle-prick; and even the cries and contortions of a vivisected creature are to be regarded for the most part, as an illusion. "When an animal manifests the appropriate signs, the sentimentalist at once leaps to the conclusion that the behavior that he observed in others implies the presence of the same state of feelings in them as would induce the same behavior in himself." But this, Mr. Myers assures us, is an error of the kind known as the "psychologist's fallacy"; we really know nothing about it. "Considerations of this kind only show what control the layman should exercise over the springs of his natural pity, when he reads of seemingly painful, but really painless experiments upon the internal organs of living animals." That during such operations (which, by the way, are sometimes extended over weeks and months) the animals are put under the influence of an anæsthetic; that in England this is demanded by law, that in other countries it is the voluntary custom of physiologists—all this he most confidently and fervently seems to believe. It is not denied that occasionally some pain may ensue; but to this writer, this apparently seems of such a trifling character that he passes it without criticism. That the pain inflicted in vivisection ever amounts to torture, is not once admitted or implied.

Now we are far from being satisfied with the comfortable conclusions which Mr. Myers has apparently reached, and which he desires to impress upon his readers. He tells us at the outset that he is not a practical vivisector; and his statements regarding the practice must therefore rest upon the exculpatory assertions of the very persons against whom the charge of inhumanity has been made. Do all of these

persons invariably tell us *the whole truth* about a practice whereby they earn their daily bread? Is it in accord with what Mr. Gladstone happily designated "the delicate sense of the reasonableness of things" that some of the men charged with cruelty should not attempt to defend themselves by distorting the truth? It seems to us that, while the statements of experimenters are entitled to all consideration which character and motives imply, a little hesitancy in granting absolute faith may be excusable; and that "laymen and sentimentalists" have some reason to doubt. That vivisectioned animals sometimes suffer, is a charge that rests wholly upon the evidence of men who are neither "sentimentalists" nor "laymen," but members of the medical profession. Speaking before the British Medical Association at its annual meeting in 1899, the President of one of the sections, Dr. George Wilson, LL. D., made this remarkable charge:

"I boldly say there should be some pause in these ruthless lines of experimentation. . . . I have not allied myself to the anti-vivisectionists, but I accuse my profession of misleading the public as to the cruelties and horrors which are perpetrated on animal life. When it is stated that the actual pain involved in these experiments is commonly of the most trifling description, there is a suppression of the truth, of the most palpable kind. . . . The cruelty does not lie in the operation itself, which is permitted to be performed without anaesthetics, but in the after effects. *Whether so-called toxins are injected under the skin into the peritoneum, into the cranium, under the dura mater, into the pleural cavity, into the veins, eyes, or other organs—and all these methods are ruthlessly practised—there is long-drawn-out agony. The animal so innocently operated on may have to live days, weeks, or months, with no anaesthetic to assuage its sufferings, and nothing but death to relieve.*" [Italics ours.]

And yet Mr. Myers would have us believe that even in these experiments the pain "cannot exceed that of a poisoned rat or mouse." How does he know? Do poisoned rats and mice live in agony "for days, weeks, or months"?

Take another medical witness. In his presidential address before the American Academy of Medicine, Dr. Theophilus Parvin, LL. D., a professor of Jefferson Medical College in Philadelphia, protested warmly against the cruelty of certain vivisectioners. There were men, he declared, both in America and Europe, "who seem, seeking useless knowledge, to be blind to the writhing agony, and deaf to the cry

of pain of their victims, and who have been guilty of the most damnable cruelties, without the denunciation by the public and the profession that their wickedness deserves." Is not this remarkable language, coming—not from a "layman,"—but a professor in a leading medical college, regarding a practice wherein Mr. Myers finds nothing worthy of criticism? It was no sentimentalist, but rather one of the most distinguished surgeons that America ever produced, and for many years a professor in Harvard Medical School—Dr. Henry J. Bigelow, LL. D., who in a paper read before the Massachusetts Medical Society, protested against "*the cold-blooded cruelties* now more and more practiced under the authority of science," producing results which he declared were "contemptible, compared with the price paid in agony and torture." Elsewhere the same eminent medical authority says:

"The ground for public supervision is that vivisection immeasurably beyond any other pursuit, *involves the infliction of torture to little or no purpose.* Motive apart, painful vivisection differs from that usual cruelty of which the law takes absolute cognisance, mainly in being practised by an educated class, who, having once become callous to its objectionable features, *find its pursuit an interesting occupation under the name of Science.*" . . .

"*The law should interfere.* There can be no doubt that in this relation there exists a case of cruelty to animals far transcending in its refinement and in its horror anything that has been known in the history of nations.

"There will come a time when the world will look back to modern vivisection in the name of Science as it now does to burning at the stake in the name of religion." [Italics ours.]

Quotations like these, from the writings of medical men might be indefinitely multiplied. They are the utterances not merely of physicians, but of medical professors familiar with what goes on about them. We cannot afford to dismiss them with a shrug and a sneer. If their tones seem more resonant than those of the majority in their profession, it may be because success and assured eminence have gained for them the inestimable privilege of absolute fearlessness regarding the criticism of lesser men. But of the existence of these "cold-blooded cruelties," of this agony and torture, of this pain to which death by burning alive is a happy release—where do we find the slightest reference in Mr.

Myers' paper? Not a hint of its existence is there to be found! Why? Is it because he accepts with implicit faith the word of the experimenter? That is his privilege. We admit that it may be a matter of choice. But upon whom is reliance most safely placed in our attempts to penetrate to the truth,—upon men grown old in the medical profession, connected with institutions of learning, men who cannot have the slightest reason for adverse criticism, but every inducement for discreet silence—or, on the other hand, the practical experimenter who may feel that his position is dependent upon the maintenance of absolute freedom to do whatever he likes within the walls of his laboratory?

If space permitted, it would be of interest to follow all the ramifications of Mr. Myers' remarkable argument. In certain directions, it seems to us to denote a peculiar tendency to credulity wherever vivisection is in question. Bichat, he tells us naively, once saw dogs "tearing their peritoneum and devouring their own intestines which had protruded from a hole in the abdominal wall." But does Mr. Myers seriously consider such an action as the painless and contented gratification of the animal's appetite? Once, in a physiological laboratory, we witnessed precisely the same thing; an animal, during a vivisection, partly escaped from its bonds, and with the utmost fury of despair, bit and tore its own bleeding wounds. Had Mr. Myers been present at that experiment, we hardly believe he would have contended for its painlessness. "Again and again," he assures us, "dogs have been observed to wag the tail or lick the hands of the operator, even immediately before the beginning of the operation!" What inference would he have us draw from the fact? That it betokens the happiness of the animal? Observers have drawn a far different conclusion. "I recall to mind," said Dr. Latour, "a poor dog, the root of whose spinal nerves Magendie was about to expose. Twice did the dog, all bloody and mutilated, escape from the implacable knife, and twice did I see him put his forepaws around Magendie's neck and lick his face! I confess I could not bear the sight." It was a phenomenon recorded also by the editor of the London *Lancet* in a description of

what once was done in the physiological laboratory. "Look," says this editor of the leading medical journal of England, "at the animal before us, stolen (to begin with) from his master; the poor creature, hungry, tied up for days and nights, pining for his home, is at length brought into the theater. As his crouching and feeble form is strapped upon the table, *he licks the very hand that ties him!* He struggles, but in vain, and uselessly expresses his fear and suffering. . . ." We need not go on with this picture of past experimentation. It is merely of interest to show how the same fact impresses different men. Strange it is, that a dog, licking the hand of "the operator immediately before the beginning of the operation" should seem to any man to betoken the absence of all apprehension—a sign of happy animal indifference to its fate, rather than the mute, instinctive and vain appeal for sympathy to a being in the human form.

But the most painful part of Mr. Myers' essay, and in one sense its most significant inference, pertains to his unqualified approval of the attitude taken by Dr. Emanuel Klein. When this distinguished vivisector was examined before the Royal Commission regarding his practices and opinions, he frankly and honestly admitted that he never used chloroform or any other anæsthetic, except in public demonstrations, unless necessary for his personal convenience; declared that a physiologist had the right to "do as he likes with the animal"; that to save himself inconvenience he would perform even one of the most painful of operations on a dog's nerves without the use of anæsthetics; that he held himself "*entirely indifferent to the sufferings of the animal,*" and had "*no regard at all*" to the anguish of the creatures experimented upon. Quoting the last sentence, Mr. Myers does not hesitate to declare that "*Dr. Klein is perfectly right.*" We are not particularly surprised at this assurance of his agreement; but unless very much mistaken, Mr. Myers is the first Englishman who, during the past quarter of a century, has openly confessed his sympathy with such sentiments. Certainly, they were very far from meeting the approval of scientific men at the time they were

uttered. One of the most eminent scientists of the last century, writing to another man of equal eminence, thus referred to this profession of indifference to animal suffering:

"This Commission is playing the deuce with me. I have felt it my duty to act as counsel for Science, and was well satisfied with the way things are going. But on Thursday, when I was absent, ——— was examined; and if what I hear is a correct account of the evidence he gave, I may as well throw up my brief. I am told he openly confessed the most entire indifference to animal suffering, and he only gave anæsthetics to keep the animal quiet!

"I declare to you, I did not believe the man lived, who was such an unmitigated, cynical brute as to profess and act upon such principles; and I would willingly agree to any law that would send him to the treadmill."

We must ask pardon for the quotation of these forcible and far-reaching denunciations. They occur in a letter written to Charles Darwin by Professor Huxley. More than a quarter of a century has elapsed since the great English biologist thus made known the feeling which such sentiments inspired. The times have changed. To-day, a writer in defense of this attitude of indifference, tells us that Dr. Klein "is perfectly right."

The utility of animal experimentation is a question too great to be discussed now. The trouble with most of the advocates for vivisection without limitations is that they go far out of the way to glean and gather what they hope may be fresh evidences of its utility. Even those who regard vivisection in its milder aspects with a favorable eye will hardly care very much for the evidences of its usefulness that Mr. Myers presents us. Hardly a single claim made rests upon generally acknowledged facts. What, for example, has "the value of vaccination in small-pox"—however "widely recognized"—to do with vivisection of animals? Mr. Myers brings it into his catalogue of utilities, seemingly unconscious that with Jenner's discovery the practice of vivisection had nothing to do. Where are the proofs that the mortality from typhoid fever in any country has been reduced by the general use of the "appropriate antitoxin"? Where are we to look for similar evidence regarding mortality from "the Mediterranean fever" in France and Italy? We venture to say that official statistics proving any marked

reduction in the mortality from these causes of death through use of such antitoxin cannot be produced. It is interesting to know that for the first time in its history, "Havana is practically rid of yellow fever." What has this to do with experiments on animals? Perhaps the most surprising assertion of utility is that which concerns the mortality resulting from the venom of serpents; we are told that "hardly a failure is on record from the treatment of snake-bite." Of course a statement like this may mean anything—or nothing at all. Of any number of imaginable drugs or appliances it might very truthfully be said that there is "no record of failure,"—simply because they have not been tried. But if Mr. Myers believes, and desires to convey the impression that a specific and almost certain cure for the poison of venomous serpents has at last been discovered through experimentation upon animals, and that its claims of efficacy are amply evinced by a *decrease in the mortality from this cause* in the countries where venomous serpents abound, he is entirely mistaken. Every year, in British India alone, over twenty thousand men, women and children lose their lives from this one cause. That was the record up to five years ago. Has this mortality been diminished in any appreciable degree by the employment of the new remedy regarding whose use we are assured that there is "hardly a failure on record?" If so, where are the statistics? There are none. It is a claim of the laboratory. No such specific, the value of which has been demonstrated by a steady decrease of mortality as shown in the statistics of any country, can be said to exist. This is not criticism of this phase of experimentation. It is not denial that certain laboratory experiments have been apparently successful. But the claim should have stopped there. We cannot but think that the suggestion of a far wider utility should never have been made in view of the present practical impotency of every alleged discovery of the kind.

What may we say of the moral aspect of unlimited vivisection? Every man's attitude toward this question will depend in great measure upon certain primary intellectual concepts. Behind a thinking man's judgment of what is

right or wrong in human conduct must be his personal conviction regarding the meaning of the Universe in which he dwells. The creed of the vivisector is not always beautiful. Writing for the *Popular Science Monthly* a few years since, a leading American biologist, Professor Hodge, of Clark University, declared that "God clearly gives to man *every sanction to cause any amount of physical pain which he may find expedient to unravel His laws.*" Seldom, if ever, has the supremacy of science over the ordinary conceptions of morality been more definitely announced. If this doctrine be true, then the experiments with poisons, made by Ringer and others upon patients in a London hospital, the experiments upon dying children and the incurably insane, made in certain American institutions—would all find equal justification with every phase of animal experimentation; for it could then be said that "they were expedient to unravel His laws." And if the elucidation of a new fact makes right any method by which it may be torn from the secrecy wherein Nature has concealed it,—if this be the meaning of the message which modern Science is to proclaim to Humanity, then, in more senses than one, we are at the beginning of a new era. One may, indeed, imagine a Universe wherein the idea of Justice does not exist, where compassion and pity and sympathy are unknown, and where Might makes Right. In such a world, no thought of the uprightness of an action would come to mind. In such a world—unchecked except by fear—would flourish whatever tyranny might desire and force compel, the prostitution of woman, the slavery of the weak, the murder of the helpless, the causation of any amount of physical pain upon animals or children, if thereby what is hidden by Nature could be brought to light. It would be the reign of selfishness and greed, of lust and force, of cruelty—and utility. That to-day, we are not living in a world, ruled supremely by claw and tooth and nail; that some conception of moral ideas has brightened the path of humanity in its slow progress upward from brutality; that with us, power does not mean equity; that cruelty is infamous, and injustice is ignoble, and pity is divine, this world of ours owes to teaching far different

from that of the biologist who, in his imagination, creates a "God" that hides facts, and gives torture the right to find them.

What may we hope to accomplish in the reform of vivisection as it exists to-day? Considerations of space forbid anything but the briefest of outlines; and yet certain lines of possible activity would seem apparent. It seems to us, that first of all, there must be the gradual creation of public sentiment which shall be eager, not so much to condemn all vivisection, or to approve it all, *as to know with certainty the facts.* Take, for example, the question of vivisection in institutions of learning. To what extent is it carried on merely to demonstrate what every student knows in advance? If one may judge from authoritative statements put forth for general information, it would appear that certain lines of experiment are now permitted in America and in England, which hardly more than a generation ago were condemned as cruel by the medical profession of Great Britain. We ought to know if this is true; and if found so, we ought to inquire why it is that experiments which scarcely thirty years ago were almost universally condemned, are less abhorrent to-day? The removal of the secrecy that so generally enshrouds vivisection is the first and most important step toward any true reform.

And when secrecy is removed, and we know the facts, then must there be a yet wider promulgation of the truth about it than is possible to-day. By the propaganda of the press, by the advocacy of the principles which underlie our opposition to irresponsible and unrestricted vivisection, by the contrast of views, by the incitement of interest in a subject which is naturally most distasteful to the average mind, there must gradually be created a public sentiment that will be heard when it asks for some measure of reform, for some method for preventing what ought not to exist.

And finally, there must come the regulation of vivisection by law. This does not mean the abolition of all physiological investigation, as they who clamor for non-interference so often assert. It need not imply a single impediment to any scientific inquiry that is of potential value to humanity

and possible without anguish. But the law certainly should forbid all cruel and all useless experiments such as those so emphatically condemned by Parvin and Bigelow and Wilson. It ought to bring upon official records the number of experiments performed, the objects which were in view, the results which were attained, the species of animals upon which the investigations were made, the anæsthetics which were administered, and everything that pertains to the prevention of pain. We may say that all this is but little more than the drawing aside of curtains and the admission of the light. It is so little to ask that one is amazed at the resistance which the laboratory makes to the demand. Will that resistance be perpetually effective? We doubt it. No human institution has yet been able to keep hidden what the world wishes to know; and when all is known we may be sure that in the matter of vivisection the distinction will be very clearly drawn between what is permissible and what is to be condemned by the conscience of mankind.

THE VIVISECTION PROBLEM: A REJOINDER.

By C. S. MYERS, M. D.

I have neither the desire nor the time to reply at length to Dr. Leffingwell's criticism to my paper.

Dr. Leffingwell asks, "What . . . has the value of vaccination in small-pox . . . to do with the vivisection of animals?" Is he unaware that the supply of lymph for the purpose of vaccination in civilized communities is derived from calves who are expressly inoculated for the purpose?

He asks, "Where are the proofs that the mortality from typhoid fever in any country has been reduced by the general use of the 'appropriate antitoxin'?" He will find them in Dr. G. E. Wright's data derived from the Boer War, which are gaining general acceptance.

Then he inquires, "What has this [the fact that Havana is practically rid of yellow fever] to do with experiments on animals?" I will tell him. Yellow fever has been vanquished by the destruction of mosquitoes; the relation of mosquitoes to yellow fever was suggested by their already proven relation to malaria; our knowledge of the life-history of the malarial parasite was in great measure due to experiments on birds.

He suggests that the reason why there is no record of failure in the use of antivenene as a remedy against snake-bite is that this remedy has never been tried. I refer him to the list of cases of snake-bite successfully treated by antivenene, in the "Twentieth Century Practice of Medicine," Vol. XX, pp. 527-528.

Surely then, Dr. Leffingwell is very right when he says, "It seems to us that first of all there must be the general creation of public sentiment which shall be eager . . . to know with certainty the facts."

He accuses English physicians of experimenting with poisons on patients of a London hospital. He gives no details, but I unhesitatingly declare such abominable accusations to be false. He charges his fellow-countrymen with experimenting on the incurably insane. But in the *Journal of the American Medical Association*, 1901, Professor Keen has al-

ready proved the "garbled and inaccurate" nature of this charge. The recent English libel action of Bayliss vs. Coleridge has shown us how such anti-vivisectionist methods may be satisfactorily dealt with. I will merely express my surprise that a scientifically educated man can be found who ventures to make capital out of the popular aversion to "experiment," who ignores the fact that every advance in the art of healing must necessarily be "experimental" at the outset.

Dr. Leffingwell tries to convict me of sympathy with Dr. Klein's attitude towards vivisection generally, because I presumably interpreted one of his answers before the Royal Commission. Dr. Leffingwell has omitted to state that Dr. Klein vainly begged the Commissioners to amend his evidence, as "when under *viva voce* examination the fact of my being a foreigner made me often not able to appreciate all the purport of the questions which were asked of me, and that therefore my answers were not always such as I would have desired to give if I had quite understood the question." This letter and the amended evidence could hardly escape the careful reader's notice, as they are referred to in the first page of the report and are published at length in an appendix. The appendix throws an altogether different light on Dr. Klein's real attitude. Suffice it to say that my personal acquaintance with this eminent pathologist assures me that he is incapable of unnecessary cruelty.

But what is Dr. Leffingwell's attitude in regard to vivisection? He must be well aware that there is not a physician of eminence at the present day who believes that animals "are tortured to little or no purpose" for scientific objects. Yet he attributes unverifiable quotations to the editor of the *Lancet*, which after special inquiry I have good reasons for doubting, and he mixes up modern with past opinions, thus successfully confusing the ignorant. But although he uses all the methods of the anti-vivisectionists, he has not the courage to decry vivisection "in certain phases." He does not choose to tell us what particular "phases" are to be condemned. He pretends that vivisections are shrouded in mystery and suggests that under present arrangements physiologists are in the habit of keeping secret the experiments so cruelly made by them on animals!

COMMENTS ON MR. MYERS' REJOINDER.

By ALBERT LEFFINGWELL, M. D.

Mr. Myers refers to certain "quotations" (there was but one) "attributed to the editor of the *Lancet*, which, after special inquiry, I have good reasons for doubting." It will be very easy to remove his doubts. The leading editorial in the *Lancet* of August 22, 1863, is a vigorous arraignment of vivisection as a method of teaching well-known facts. Said the editor of the *Lancet*: "The entire picture of vivisectional illustration of ordinary lectures is to us, personally, repulsive in the extreme. Look, for example, at the animal before us, stolen (to begin with) from his master"; and then follow the words which Mr. Myers imagined it was safe to doubt. "We repudiate the whole of this class of procedure," adds the writer of the *Lancet* editorial. And while Mr. Myers is verifying the accuracy of this quotation, if he will also take the trouble to look up the editorials on vivisection which appeared in the *Lancet* of August 11, 1860; October 20, 1860; February 6, 1875, and August 21, 1875; in the *Medical Times and Gazette* (London) of March 2, 1861, and August 16, 1862; in the *British Medical Journal* of May 11, 1861; October 19, 1861; September 6, 1862; August 22, 1863; September 19, 1863; January 16, 1864, and June 11, 1864, he will see how the horrible cruelties that sometimes pertain to scientific experimentation upon animals were regarded by the medical profession of England a generation ago. Mr. Myers calls these "past opinions." Since they relate to ethics, how do they cease to be of value because forty years old?

In my paper there was a line referring in the briefest way possible to Ringer's experiments in a London hospital, upon his unfortunate patients. Apparently Mr. Myers never heard of them; but he says, "I unhesitatingly declare such abominable accusations to be false," with a fervor that certainly does credit to his heart. But suppose the abominable accusations are proven true, in what position does Mr. Myers then find himself? Nothing is more certain than that Dr. Ringer, in his work on "Therapeutics" and in medical jour-

nals like the *Lancet*, stated that he had made such "experiments"; among other poisons thus experimented with, and duly described, were muscarin, gelsemium and ethylatropium. In the *Medical Times* (London) for November 10, 1883, the editor thus refers to certain of Dr. Ringer's experiments:

"In publishing—and, indeed, in instituting *their reckless experiments* on the effect of nitrite of sodium on the human subject, Professor Ringer and Dr. Murrell have made a deplorably false move. . . . It is impossible to read the paper in last week's *Lancet* without distress. Of the eighteen adults to whom Drs. Ringer and Murrell administered the drug in ten-grain doses all but one averred that they would expect to drop down dead if they ever took another dose. One woman fell to the ground and lay with throbbing head and nausea for three hours. The next series of experiments was with five-grain doses. The same results followed in ten out of sixteen cases. . . . Whatever credit may be given to Drs. Ringer and Murrell for scientific enthusiasm, it is impossible to acquit them of grave indiscretion. There will be a howl throughout the country if it comes out that officers of a public charity are in the habit of trying such useless and cruel experiments on the patients committed to their care."

"*Useless and cruel experiments on patients*"—that is the charge made against Dr. Ringer by a leading medical journal of his own land. I did not stigmatize these experiments in any way; that was done by his own countrymen.

In bringing forward the fact that the Royal Commission declined to permit Dr. Klein to substitute his amended remarks for his actual statements, I cannot see that Mr. Myers renders any great service to his physiological friend. A writer takes accepted testimony, not rejected and discredited inventions. The inquiring reader should procure a copy of Dr. Klein's testimony, so far as it related to his personal practices, and see if in Dr. Klein's replies to the questions asked him, he can discern the slightest evidence of inadequate comprehension.

If Mr. Myers thinks that reference to some army surgeon's experience during the Boer War supplies the statistics of a country, for which I asked; if he does not know that vaccination was carried on for nearly seventy years, independently of calf-lymph, and that the vivisection of animals contributed nothing to Jenner's discovery; if he fancies that

the freedom of Havana from yellow fever,—by no means so assured as when he wrote,—may be attributed to experiments on birds; if he believes that reference to certain alleged cures of snake-bite by antivenene furnish me with evidence of decreased mortality in a nation like that of India, where 20,000 deaths from this cause annually occur,—then I fear that no amount of reasoning, within space available here, would convince him of his errors.

If this discussion must close here, let it be on my part with an appreciation. Of Mr. Myers' sincerity and intellectual honesty I can have no doubt. Thirty-five years ago I should have written as he writes to-day, inspired by the delusion that science can make ethical laws for herself. And yet it is possible that were ours the opportunity of an extended contrast of views, we should find not a few points of agreement. He would certainly discover that I am not an anti-vivisectionist; and that everything in the way of painless experimentation seems to me as unobjectionable as to himself. On the other hand, I think I should be able to point out to him lines of vivisection, the cruelty and wickedness of which are so manifest, that, convinced of their existence, he could not fail to condemn them as severely as did the editors of the *British Medical Journal* and the *Lancet* forty years ago.

(The following criticism is reprinted from the JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS, of March 16, 1905, Vol. II, No. 6, pp. 157-159.)

The Vivisection Problem. (A Reply.) ALBERT LEFFINGWELL, M.D. *International Journal of Ethics*, January, 1905, pp. 221-231.

The matter of the controversy over vivisection is continually at the focus of public attention, and this alone would sufficiently account for a great deal of its puerile treatment. No other current question affords a more vivid illustration of the oscillations of thought. The almost exact balance maintained between approbation on the ground of utility and disapprobation on the ground of cruelty, producing much fluctuation of individual conviction, still keeps the public about evenly divided.

This article is written in reply to one entitled, 'Is Vivisection Justifiable?' by C. S. Myers, of Gonville and Caius College, Cambridge, published in the same journal, April, 1904.

Mr. Myers, who poses as an unprejudiced arbitrator having general acquaintance with the principles of ethics and psychology, registers an almost unqualified endorsement of the practice. He classifies the opponents of vivisection on moral grounds according to three standpoints, viz., the 'religious,' the 'common-sense' and the 'naturalistic.' The first considers that animals are placed in the world by Divine Will and that man is their natural protector; it is an abuse of superior intelligence for man to inflict pain on them for any purpose whatever. The 'common-sense' antagonist, while opposing extreme cruelty, sanctions the infliction of a certain amount of pain upon animals, providing man's gain thereby is sufficiently great. The third standpoint, the 'naturalistic' condemns vivisection not so much on account of the pain endured by the animals, as on account of the reflex effect which cruelty has upon man.

The arguments which Mr. Myers adduces in refutation of these respective positions are: that those who argue from the 'religious' standpoint are inconsistent when they sanction the slaughtering of cattle and the poisoning of vermin for the sake of increasing human comfort; that the 'common-sense' antagonist is ignorant of the great utility of vivisection; and that the 'naturalistic' view does not take into account the truth of 'multiple-personality' which means that, while a vivisector may be humane on all other points, sympathy would be positively detrimental to success at the operating-table.

This author cites the 'psychologist's fallacy' in refuting the charge of 'the sentimentalist' that vivisection involves the infliction of agony, saying that the cries and writhing of the animal-subjects are no criterion of true 'mental pain.' Besides, dogs have been observed to wag their tails and lick the hands of the operator, which evinces their indifference to the experiment.

He further considers it needless to discuss the utility of vivisection, productive as it has been of such magnificent results in the study of microorganisms and the discovery of antitoxins. Typhoid and Mediterranean fever, diphtheria, tuberculosis in cattle and snake-bite have been successfully combated with remedies perfected through vivisectional experiments.

Dr. Leffingwell, himself a physician, is inclined to view the matter in another light. While laying no especial claim to knowledge of the principles of ethics and psychology, he doubts whether natural laws

are to be discovered and human welfare promoted at the expense of animal agony. The question of *degree of pain* is one of some importance to him. He says, "The impeachment of unlimited vivisection rests wholly upon the conviction that in some of its phases it is productive of agony." The recognition of the value and moral legitimacy of definitely restricted vivisection should not blind one to the fact that, beyond certain limits, it becomes grossly immoral. "That vivisectioned animals sometimes suffer, is a charge that rests wholly upon the evidence of men who are neither 'sentimentalists' nor 'laymen,' but members of the medical profession. Speaking before the British Medical Association at its annual meeting in 1899, the President of one of the sections, Dr. George Wilson, LL.D., made this remarkable charge: 'I have not allied myself to the anti-vivisectionists, but I accuse my profession of misleading the public as to the cruelties and horrors which are perpetrated on animal life. . . . Whether so-called toxins are injected under the skin, into the peritoneum, into the cranium, under the dura-mater, into the pleural cavity, into the veins, eyes, or other organs—and all these methods are ruthlessly practiced—there is long-drawn-out agony. The animal so innocently operated on may have to live days, weeks or months, with no anaesthetic to assuage its sufferings, and nothing but death to relieve.'"

Dr. Henry J. Bigelow, LL.D., for many years a professor in Harvard Medical School, says: "The ground for public supervision is that vivisection, immeasurably beyond any other pursuit, involves the infliction of torture to little or no purpose."

Dr. Leffingwell tends to believe, in spite of the psychologist's fallacy, that Mr. Myers' citation of dogs having been observed to wag their tails and lick the hands of the operator, betokens, not a happy animal indifference to fate, but rather a mute, instinctive and vain appeal for sympathy.

Concerning the utility of vivisection, Dr. Leffingwell is by no means so sure as Mr. Myers. "Where are the proofs that the mortality from typhoid fever in any country has been reduced by the general use of the 'appropriate anti-toxin?' Where are we to look for similar evidence regarding mortality from Mediterranean or yellow fever? Has the mortality from snake-bite been diminished in any appreciable degree by the employment of a remedy regarding whose use we are assured there is hardly a failure on record?" If so where are the statistics? There are none. It is a claim of the laboratory."

Professor Hodge, of Clarke University, declared that "God clearly gives to man every sanction to cause any amount of physical pain which he may find expedient to unravel His laws." Dr. Leffingwell lacking the necessary general acquaintance with the principles of ethics, can not accept this enunciation of the vivisector's creed, and marvels that God should hide facts and give torture the right to find them.

"What may we hope to accomplish in the reform of vivisection as it exists to-day? . . . It seems to us that, first of all, there must be the gradual creation of public sentiment which shall be eager, not so much to approve all vivisection, or to disapprove it all, as to know with certainty the facts. Take, for example, the ques-

tion of vivisection in institutions of learning. To what extent is it carried on, merely to demonstrate what every student knows in advance? . . . *The removal of the secrecy that so generally enshrouds vivisection is the first and most important step toward any true reform.* [My italics.]

"And finally there must come the regulation of vivisection by law. . . . *The law ought to bring upon official records the number of experiments performed, the objects which were in view, the results which were attained, the species of animal upon which the investigations were made, the anaesthetics which were administered, and everything that pertains to the prevention of pain.* [My italics.]

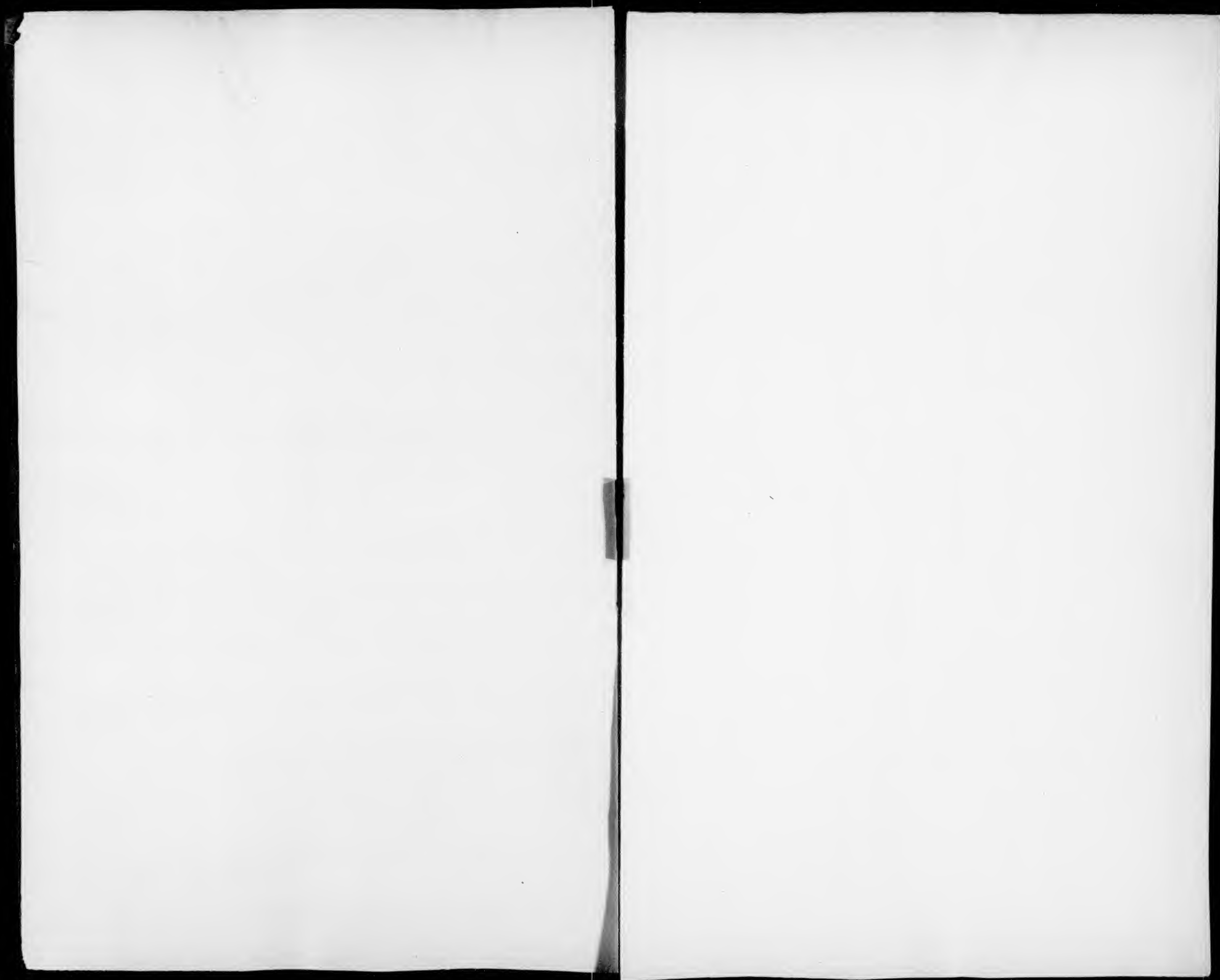
This is a quite voluminous notice of Dr. Leffingwell's eleven-page article to take in this JOURNAL. I believe, however, that it is justified. Further, I would suggest that that article be copied verbatim by all magazines interested in the promotion of humanitarian principles. A more philosophic treatment of what has unfortunately become a very much confused subject, it has not been my fortune to discover; a more concise indication of the ends toward which reform should bend its energies has not yet appeared in print. I conceive that Dr. Leffingwell's reply, in the thoughts of all right-minded persons, will consign such ethical sophistries as are contained in Mr. Myers' paper to the limbo of eternal scorn. Vivisection, as a problem calling for immediate solution, does not demand 'a general knowledge of the principles of ethics and psychology'; it calls for a pragmatic acceptance of our direct intimations of its evils. "No one," says Goethe, "knows what he is doing while he acts aright, but of what is wrong we are always conscious." Those who, in this connection, subordinate the practical impulse toward the alleviation of animal woes to the logical demonstration of its validity, would do well to read Aristotle on the golden mean. Publicity and restriction, not total condemnation, is the key-note of Dr. Leffingwell's appeal, an appeal to which every one should lend support.

COLUMBIA UNIVERSITY.

PHILIP HYATT TARR.

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I hereby give and bequeath the sum of _____ Dollars
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